

REMARKS

Favorable reconsideration and allowance of the present application in view of the foregoing amendments and following remarks are respectfully requested.

Currently, claims 1-8, 10-19, 41-46 and 58-59 remain pending in the present application, including independent claims 1 and 14. In general, the claims are directed to an elastic film that contains a thermoplastic polyurethane elastomer and a filler. The film has been stretched an amount sufficient to form micropores adjacent to the filler particles. In the latest Office Action, independent claims 1 and 14 were rejected under 35 U.S.C. § 102 or under 35 U.S.C. § 103 in view of U.S. Patent No. 5,445,862 to Kaneko. Independent claim 1 was also rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,245,401 to Ying. In response, it is believed that claims 1 and 14 patentably define over the cited references as discussed in greater detail below.

For instance, claim 1 now defines an elastic film that consists essentially of a thermoplastic polyurethane elastomer and a filler. As stated in section 2111.03 of the Manual of Patent Examining Procedure, the phrase “consisting essentially of” is typically used and defined in the context of compositions and limits the scope of a claim to the specified materials or steps and those that do not materially affect the basic and novel characteristics of the claimed invention. Thus, when used in claim 1, the phrase “consisting essentially of” does not exclude the inclusion of additives, such as stabilizers, in the film layer and other materials that would not materially affect the basic and novel characteristics of the elastic film.

Use of the phrase “consisting essentially of” in claim 1, however, does exclude the films disclosed in Kaneko. Kaneko teaches the formation of films made primarily from an ethylene- α -olefin copolymer. The ethylene- α -olefin copolymer is combined with a thermoplastic elastomer. In one of the embodiments disclosed in Kaneko, the thermoplastic elastomer may be a polyurethane.

As taught in Kaneko, the ethylene- α -olefin copolymer is a necessary and primary ingredient of the film and is present in the film in an amount of at least 65% by weight. The inclusion of an ethylene- α -olefin copolymer in an amount of at least 65% by weight substantially changes the novel or basic characteristics of Applicants invention. For instance, as stated throughout the specification, the present invention is directed to microporous films made from polyurethane elastomers that have the heat and fabrication characteristics of a conventional thermoplastic and the performance properties of a conventional thermoset rubber. The thermoplastic polyurethane elastomers are multi-block polymers that contain hard segments and soft segments. At room temperature, the low melting soft segments are incompatible with the polar hot melting hard segments, which causes microphase separation. Upon heating above the melting temperature of the hard segments, the polymer forms a homogeneous viscous melt, which can be processed by thermoplastic techniques. Subsequent cooling, however, leads to segregation of the hard and soft segments.

The properties of the polyurethane elastomers are strongly affected by hard and soft segment domain morphology. In particular, the mechanical elastic properties of thermoplastic polyurethane elastomers are strongly related to the time-dependent formation of domain morphology. Therefore, post-curing of a thermoplastic

polyurethane elastomer after thermoformation can be done in order to obtain optimal properties.

According to the present invention, a film is formed consisting essentially of a polyurethane elastomer and a filler. More specifically, as stated on page 11, the present invention is directed to the use of thermoplastic polyurethane elastomers that can be filled with a filler, formed into a film, stretched to form micropores, and thereafter cured where a substantial portion of most of the phase separation occurs. Using materials as described above not only provides processing advantages but allows the film to recover a substantial amount of elasticity that otherwise would be lost.

In comparison, the film disclosed in Kaneko contains at least 65% of an ethylene- α -olefin copolymer, which is a thermoplastic polymer as opposed to a polyurethane elastomer. Of significance, ethylene- α -olefin copolymers do not possess hard segments and soft segments similar to polyurethane elastomers and are not capable of hard and soft segment phase separation such as polyurethane elastomers. Thus, ethylene- α -olefin copolymers are not capable of being stretched and thereafter curing where a substantial amount of phase separation occurs. Consequently, when an ethylene- α -olefin copolymer is incorporated into a film in an amount of at least 65% as taught in Kaneko, the basic and novel characteristics of the invention defined in claim 1 are materially affected. As such, claim 1 patentably defines over Kaneko.

In the Office Action, claim 1 was also rejected under 35 U.S.C. § 102(e) in view of Ying. Ying is directed to segmented conformable breathable films. Although Ying does disclose the use of polyurethanes, Ying does not disclose a polyurethane elastomer film containing a filler. For example, as stated in column 10, the

polyurethane films are described as being elastic and breathable but “non-porous”. Accordingly, claim 1 also patentably defines over Ying.

Independent claim 14 in the present application was also rejected in view of Kaneko. Claim 14 is directed to an elastic film that contains an elastic polymer film material and the filler. The elastic polymer film material consists of a thermoplastic polyurethane elastomer. Due to the inclusion of the phrase “consists of” claim 14 excludes the use of other polymeric film materials in forming the elastic film.

As opposed to claim 14, instead of being formed from an elastic polymer film material that consists of a thermoplastic polyurethane elastomer, Kaneko teaches forming the film from primarily an ethylene- α -olefin copolymer. Thus, Kaneko fails to disclose or suggest forming the film from only a thermoplastic polyurethane elastomer as the film forming material. In fact, Kaneko states in column 5 that the elastic film is formed from two components that “**must be**” such that the ethylene- α -olefin copolymer is 65-90% by weight. Thus, Kaneko makes clear that the elastic films disclosed therein and the properties that are obtained are only possible through the use of at least two polymeric film-forming components.

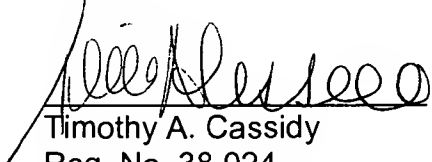
In the Office Action, the Examiner stated that the “comprising” language of claim 14 does not exclude an embodiment where the elastic film is formed from an ethylene- α -olefin copolymer in combination with a thermoplastic polyurethane elastomer, and a filler. To the contrary, an ethylene- α -olefin copolymer as disclosed in Kaneko is clearly an elastic polymer film material as defined in claim 14 and therefore is excluded from the claim by the use of the phrase “consisting of”. The term “comprising” at the beginning of the claim allows for the inclusion of other ingredients into the film such as

a stabilizer (see claim 39) but does not allow for the presence of other elastic polymer film materials. As such, claim 14 also patentably defines over Kaneko.

In summary, it is believed that the present application is in complete condition for allowance and favorable action, therefore, is respectfully requested. Should any issues remain after consideration of this amendment, however, then Examiner Vo is invited and encouraged to telephone the undersigned at her convenience.

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